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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,312	09/30/2003	Vivek Jain	JP920030093US1	9424

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EXAMINER
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AHMED, AFFAF

ART UNIT	PAPER NUMBER
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3622

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11/13/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/674,312	<b>Applicant(s)</b> JAIN ET AL.	
	<b>Examiner</b> AFAF AHMED	<b>Art Unit</b> 3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-33,36,38,39,43-45,47,49-51 and 56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-33,36,38,39,43-45,47,49-51 and 56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Status of Claims***

1. This action is in reply to the amendment filed on 08/07/2008.
2. Claims 29-33, 36, 38-39, 43-45, 47, 49, 50, 51 and 56 have been amended.
3. Claims 34-35, 37, 40-42, 46, 48, 52-55 have been canceled.
4. Claims 29-33, 36, 38-39, 43-45, 47, 49, 50, 51 and 56 are currently pending and have been examined.
5. Applicant has clarified and amended claims 29,43-51, 55 and 56, therefore, claim Rejections - 35 USC § 112 first paragraph is withdrawn.
6. Applicant has amended and clarified claims 43-50 to overcome claim Rejections - 35 USC § 101, therefore, the rejection is withdrawn.
7. Applicant corrected claim 36 dependency and canceled claim 37, therefore claim objection is withdrawn.
8. Applicant has amended claims 29-33, 36, 38-39 and 56, however, Applicant fails to overcome claim Rejections - 35 USC § 101, therefore the rejection stands.
9. Applicant argues that independent claims 29 and 56 do not describe “*a wholly mental process because the claims describe merchant inputting information and upon automatic processing by a system providing marketing strategy to the merchant.*” However, claims 29 and 56 do not recite **an automatic processing by a system**. The body of the claims should contain components (structure) of how the components of the system will perform the system functionality. Inputting by a merchant at least one specified objective is a step of performing an action and is not an actual structure that is tied to another statutory class of how the step will be performed.

### ***Response to Applicant's Arguments***

10. Applicant's amendment and arguments filed on 08/07/2008 have been fully considered and discussed in the next section.
  - Applicant argues that Abe fails to teach or suggest specified period or a specified budget, which are inputted by a merchant, as constraints to generating a plurality of possible marketing strategies are moot based on new ground of rejection.
  - Applicant argues that Abe does not disclose or suggest “*a marketing channel, derived from a customer' preference, as a constraint to an action in a policy associated a marketing strategy.*” The claim does not recite the above limitation, the claim recites: *wherein said*

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*various actions are constrained by a choice of a marketing channel.* It has been held that although claims are interpreted in light of the specification, limitations from the specification are not read into the claims (In re Van Geuns, 26 USPQ2d 1057 (CA FC 1993)).

### ***Claim Rejections - 35 USC § 101***

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

12. Claims 29-33 and 56 are rejected under 35 U.S.C. 101, as best understood, it appears that the claimed method steps could simply be performed by mental process alone and are not statutory. The following passage comes from In Re Comiskey 84 USPQ2d 1670:

It is thus clear that the present statute does not allow patents to be issued on particular business systems—such as a particular type of arbitration—that depend entirely on the use of mental processes and is not tied to another statutory class. In other words, the patent statute does not allow patents on particular systems that depend for their operation on human intelligence alone, a field of endeavor that both the framers and Congress intended to be beyond the reach of patentable subject matter. Thus, it is established that the application of human intelligence to the solution of practical problems is not in and of itself patentable. The independent claims are directed towards a method. Since the claims are directed to a process without including another statutory class of invention (manufacture, machine, composition of matter), these claims fall within the scope of human intelligence alone, and are non-statutory.

### ***Claim Rejections - 35 USC § 112***

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claim 43 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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15. Claim 43 recites the limitations of: *a memory for storing said at least one specified merchant objective, which is inputted by a merchant, said at least one specified merchant objective including said specified time period and said specified budget as constraints; and a microprocessor configured to perform certain actions.*" It is unclear what relationship exists between the memory and the microprocessor that the Applicant is referring to. Furthermore, it is unclear how the microprocessor performs the claimed limitations without receiving the information from the memory device via a communication device and/or other interface device. Appropriate correction and / or clarification is required.

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claims 29-33, 36, 38-39, 43-45, 47, 49, 50, 51 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al, US Pub No. 2004/0015386 in view of Mittal et al, US Pub No: 2004/0117239 A1.

#### **Claims 29, 43, 49 and 56:**

Abe discloses:

- *generating a plurality of possible marketing strategies, each of said plurality of possible marketing strategies comprising a set of initiatives, which are deployed together in a given sequence for said specified time period,*

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- *wherein said initiatives include any of bundling of products, cross-sells, up-sells, coupons, discounts, promotions, advertisements, surveys, and customer feedback;*

See at least paragraphs 11-14, 179, 181 and 186.

- *determining an optimal marketing strategy from said plurality of possible marketing strategies, each of said plurality of possible marketing strategies corresponding to a policy comprising a sequence of various actions taken at different states encountered during said specified time period;*
- *wherein each of said different states corresponds to a set of variables including any of customer profile, purchase frequency, and monetary value of purchase, associated with a customer at a time in said specified time period;*

See at least paragraphs 66-67 and 152.

- *wherein said various actions include at least one randomized action;*

See at least paragraph 150.

- *wherein said various actions are constrained by a choice of a marketing channel (see at least paragraphs 163-164 and 184-189);*
- *wherein said various actions are deployed across said different states encountered during said specified time period to provide a plurality of policies (see at least paragraph 150);*
- *wherein each of said plurality of policies is evaluated in a context of a reinforcement learning algorithm, in which values of each of said plurality of policies corresponds to a vector of total expected rewards, said total expected rewards comprising a sum of rewards corresponding to a monetary value for each of said various actions deployed across each of said different states during said specified time period (see at least paragraphs 73-87);*
- *wherein said determining of said optimal marketing strategy comprises determining an optimal policy for each state during said specified time period based on past data (see at least paragraph 11-14, 152-157 and 167) and wherein said determining of said optimal policy comprises:*
  - *evaluating, in order, said each state for said specified time period across each of said plurality of policies, corresponding to said sum of rewards ; and identifying said optimal policy, associated with said optimal marketing strategy, by a maximal value representing a maximal total expected reward for said optimal policy ;*

See at least paragraphs 18, 73-87 and 95;

Abe does not specifically disclose:

- *outputting, to said merchant, the optimal marketing strategy;*

However, Abe in at least paragraph 154 discloses an optimized targeted marketing for transforming the model of value functions into a set for targeting rules that specifies actions to take, given a set of features corresponds to the present customer. the transformation outputs targeting rules that specify an action that corresponds to the action with the maximum value according to the value function for a given set of feature values.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Abe' system and method for sequential decision of developing marketing strategy with an outputting to a merchant the optimal marketing strategy with the motivation of providing the merchants with an optimal plan to effectively evaluate the performance of a particular marketing strategy.

Abe does not specifically disclose, but Maittal, however, discloses:

- *inputting, by a merchant, said at least one specified merchant objective, said at least one specified merchant objective including said specified time period and said specified budget as constraints (see at least paragraph 15);*

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Abe's method and system for sequential decision making for CRM with Mittal's method and system for conducting marketing research with the motivation of providing the merchants with an optimal marketing strategy developed within a set budget and time period.

**Claims 30, 44 and 50:**

Abe/ Mittal disclose the limitations as shown above.

Abe further discloses:

- *selecting at least one initiative that enables an addressing of the specified objective.*
- *determining sequences in which selected initiatives can be deployed, if more than one initiative is selected.*
- *combining the selected initiatives in the determined sequences to obtain the plurality of marketing strategies.*

See at least paragraphs 70, 176 and 199;

**Claims 31 and 32:**

Abe/ Mittal disclose the limitations as shown above.

Abe further discloses:

- *varying parameters of initiatives to generate new initiatives corresponding to new states during said specified time period (see at least paragraphs 195-199);*
- *varying deployment time of initiatives (see at least paragraphs 201 and 202);*

**Claims 33, 38, 45 and 51:**

Abe/ Mittal disclose the limitations as shown above.

Abe further discloses:

- *determining an optimal policy for each state based on past data;*
- *identifying the state of a customer, the customer visiting a merchant or the customer being selected from a database of customer ;*
- *identifying the optimal policy for an identified customer state;*

See at least paragraphs 11-14, 152-157 and 167.

- *modeling customer's preferences for marketing channels, cost and effectiveness of different marketing channels, and the specified budget as effective constraints;*
- *determining an optimal feasible policy based on the identified optimal policy and effective constraints corresponding to marketing channels; and determining the optimal marketing strategy from the optimal feasible policy;*

See at least paragraphs 185.192-196 and fig 19 with the associated text;

**Claim 36:**

Abe/ Mittal disclose the limitations as shown above.

Abe further discloses:

- *computing transition probabilities from a given state to another state for the policy; and computing a value of expected immediate reward corresponds to a given state; computing a discount expected value of a resulting state; and computing a sum of expected immediate reward and the discounted expected value (see at least paragraphs 15-16, 73-87);*

**Claims 39 and 47:**

Abe/ Mittal disclose the limitations as shown above.

Abe further discloses:

- *determining an optimal feasible policy based on constraints corresponding to marketing channels comprises mapping the optimal policy uniquely to a closest*



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*feasible optimal policy based on the constraints, if the constraints are not satisfied by the optimal policy (see at least paragraphs 179,183,185 and 203-204);*

### **Conclusion**

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS from the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX Months from the mailing date of this final.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Affaf Ahmed whose telephone number is 571-270-1835. The examiner can normally be reached on Monday - Friday, 8:30 am-6:00 pm est, alt Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber can be reached at 571-272-6724. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA

/Yehdega Retta/

Primary Examiner, Art Unit 3622